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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,776	06/03/2001	Steven Teig	SPLX.P0060	7601

23349 7590 04/03/2003
STATTLER JOHANSEN & ADELI
P O BOX 51860
PALO ALTO, CA 94303

EXAMINER

NGUYEN, DAO H

ART UNIT PAPER NUMBER

2818

DATE MAILED: 04/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



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Office Action Summary

Application No.

09/681,776

Applicant(s)

TEIG ET AL.

Examiner

Dao H Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. In response to the communications dated 06/03/2001 through 04/05/2002, claims 1-20 are active in this application as a result of the cancellation of claims 21-47.

Acknowledges

2. Receipt is acknowledged of the following items from the Applicant.
 - a. Affirmation of the election without traverse to prosecute the invention of Group I, claims 1-34 and 36-41 was made in the Response to Restriction Requirement, dated 04/05/2002, and made of record as Paper No. 6.
 - b. Cancellation of claims ²¹⁻⁴⁷~~7-10~~. This cancellation was made in the Preliminary Amendment, which is concurrently filed with the Response to Restriction Requirement, and made of record as Paper No. 7.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claims 4 and 14 are objected to under 37 CFR 1.75 as being substantial duplicate of claims 3 and 13, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, lines 2-3, the phrase "said region comprising an area of said metal layer of at least 100 microns" renders the claim indefinite because the limitation(s) "an area ... of at least 100 microns" is unclear. Micron is the unit of length, not of area (square micron, ect.).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 1-10 are rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 6,150,193 to Glenn.

Regarding to claim 1, Glenn discloses an integrated circuit, as shown in figures 7C, 8(A-C), and 13(A-A), comprising:

at least one metal layer comprising at least one region 50 (Fig. 8C), said region comprising an area of said metal layer and comprising a plurality of conductors 26 to interconnect points on said integrated circuit, said conductors comprising a plurality of preferred diagonal direction conductors and at least one zag conductor; said preferred diagonal direction conductors being deposited in a preferred diagonal direction, wherein said preferred diagonal direction defines a direction relative to the boundaries of the integrated circuit (Fig. 8C); and

said at least one zag conductor being deposited in a Manhattan (or horizontal or vertical) direction and being coupled to one of said preferred diagonal direction conductors so as to interconnect points on said integrated circuit using at least one zag

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conductor and at least one preferred diagonal direction conductor. See further column 7, line 39 to column 9, line 8.

Regarding to claims 2, 3 and 4, Glenn discloses the integrated circuit, wherein said preferred diagonal direction comprises plus or minus 45 degrees relative to the boundaries of said integrated circuit. See figure 8C.

Regarding to claims 5 and 6, Glenn discloses the integrated circuit, wherein said preferred diagonal direction comprises plus or minus 60 degrees relative to the boundaries of said integrated circuit. See figure 7C.

Regarding to claims 7 and 8, Glenn discloses the integrated circuit, wherein said preferred diagonal direction comprises plus or minus 30 degrees relative to the boundaries of said integrated circuit. See figure 7C.

Regarding to claims 9 and 10, Glenn discloses the integrated circuit, wherein said Manhattan direction of said at least one zag comprises a horizontal or a vertical direction relative to the boundaries of said integrated circuit. See figure 7C, and figure 8C.

Claim Rejections - 35 U.S.C. § 103

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 11-20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,150,193 to Glenn, in view of the following remark, or of Ozawa et al., U.S. Patent No. 6,316,838.

Regarding to claim 11, Glenn discloses an integrated circuit, as shown in figures 7C, 8(A-C), and 13(A-A), comprising:

at least one metal layer comprising a plurality of conductors to interconnect points on the integrated circuit, said conductors being deposited in a preferred diagonal direction, wherein said preferred diagonal direction defines a direction, relative to the boundaries of the integrated circuit; and

at least one zag conductor, coupled to a conductor deposited in a diagonal direction, said zag conductor being deposited in a Manhattan (or horizontal or vertical) direction so as to interconnect points on said integrated circuit using at least one zag conductor and at least one preferred diagonal direction conductor. See further column 7, line 39 to column 9, line 8.

Glenn does not mention about the conductors being deposited in a preferred diagonal direction, relative to the boundaries of the integrated circuit, for at least fifty percent of conductors on the metal layer. However, it would have been an obvious

matter of design choice to depose a certain percentage of conductors in a preferred direction, since applicant has not disclosed that depositing at least fifty percent of conductors on the metal layer in a preferred diagonal direction solves any stated problem or is for any particular purpose.

In addition, Ozawa et al. disclose an integrated circuit, as shown in figures 4 and 5, comprising a metal layer having a plurality of conductors, wherein the conductors are deposited in a preferred diagonal direction, relative to the boundaries of the integrated circuit, for at least fifty percent of conductors on the metal layer. Hence, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Glenn so that the conductors of Glenn's invention being deposited in diagonal direction as that of Ozawa et al., because those skilled in the art will recognize that such modification and variations can be made without departing from the spirit of the invention of Glenn.

Regarding to claims 12, 13 and 14, Glenn in view of the above remark, or in view of Ozawa et al., disclose the integrated circuit, wherein said preferred diagonal direction comprises plus or minus 45 degrees relative to the boundaries of said integrated circuit. See figure 8C of Glenn.

Regarding to claims 15 and 16, Glenn in view of the above remark, or in view of Ozawa et al., disclose the integrated circuit, wherein said preferred diagonal direction

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comprises plus or minus 60 degrees relative to the boundaries of said integrated circuit.

See figure 7C.

Regarding to claims 17 and 18, Glenn in view of the above remark, or in view of Ozawa et al., disclose the integrated circuit, wherein said preferred diagonal direction comprises plus or minus 30 degrees relative to the boundaries of said integrated circuit. See figure 7C.

Regarding to claims 19 and 20, Glenn in view of the above remark, or in view of Ozawa et al., disclose the integrated circuit, wherein said Manhattan direction of said at least one zag comprises a horizontal or a vertical direction relative to the boundaries of said integrated circuit. See figure 7C, and figure 8C.

Conclusion

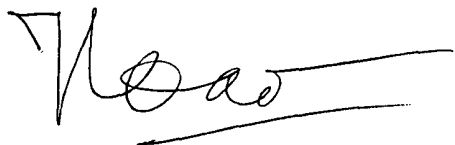
11. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao Nguyen whose telephone number is (703) 305-1957. The examiner can normally be reached on Monday-Friday 9:00am - 6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (703) 308-4910. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'Dao H. Nguyen', with a long horizontal stroke extending to the right.

Dao H. Nguyen
Art Unit 2818
June 07, 2002

HOAI HO
PRIMARY EXAMINER